DETAILED ACTION

Examiner's Note

1. This Office Action vacates Final Office Action mailed May 09, 2008 and restarts the period of reply because new claim 21 was inadvertently not included the Final Office Action mailed May 09, 2008 (note that the status of claims 11-14 and 16-20 are the same as they were in the Final Office Action mailed on May 09, 2008 and they are reproduced in this office action for Applicant's convenience). This was discussed in the telephone interview of 06/27/2008 between Applicant's Representative, Mr. Derek Benke (Reg. No. 56944) and the Examiner (please note attached Interview Summary Paper No. 20080626).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claim 11-14, 16-20 are rejected under 35 U.S.C. 102(a) as being anticipated by Lingman et al. (hereinafter "Lingman") (US Patent Application Pub. No. 2004/0167705).

Regaridng claim 11, Lingman discloses a method of estimating total mass of a motor vehicle, comprising:

calculating, by a recursive leas-squares algorithm, longitudinal acceleration of the vehicle based on Newton's Second Law of Motion, by analysis of errors, by an acceleration variation due to errors comprising an error in variation of the vehicle mass relative to a reference mass an error in inclination of the surface on which the vehicle is traveling, and errors of a model the inclination being supplied by a slope sensor or by an inclination-estimating mechanism [see Lingman: Abstract; Paragraphs [0007], [0011], [0020], [0028], [0034], [0036], [0045] and [0094]];

and estimating the inclination of the surface on which the motor vehicle is traveling based on the acceleration variation due to errors, and the recursive least-square algorithm depends on the inclination and has two modes, a flat mode when the inclination is situated in a predetermined interval of values corresponding the a plane structure, and a slope mode when the inclination is not within the predetermined interval of values corresponding to the plane surface [see Lingman: Paragraphs [0020], [0028], [0044], [0073], 0077]].

Regarding claim 12, Lingman discloses data comprising a reinitialization instruction, vehicle speed, rate of rotation of an engine, torque transmitted by the engine, detection of actuation of a clutch, detection of actuation of brakes, and detection of cornering of the vehicle are processed to calculate the longitudinal acceleration of the vehicle, a resultant of motive forces, aerodynamic forces and rolling forces, and an equivalent mass due to inertial forces of transmission [see Lingman: Paragraphs [0030], [0037], [0045], [0055], [0066], [0070] and [0092]].

Regarding claim 13, Lingman discloses processing the data is enabled when the data remains

respectively in predetermined intervals of values that ensure validity of the model, the total mass of the vehicle is estimated by recursive least-square algorithm [see Lingman: Abstract; Paragraphs [0087]; an estimate of the total mass of the vehicle is supervised by providing a predetermined mass such that the recursive least-squares algorithm has not converged, by fixing the estimated mass when a predetermined convergence criterion has been reached [see Lingman: Paragraphs [0011], [0012]].

Regarding claim 14, Lingman discloses wherein a loop of the estimated mass is additionally processed, and the acceleration variation due to errors comprising the error in the variation of the vehicle mass relative to a reference mass, the error in the inclination of the surface on which the vehicle is traveling, and the errors of the model during the data processing is calculated, and an acceleration that a slope sensor would provide if such were present is estimated and used in a recursive least-square algorithm, the slope-sensor estimate of acceleration using the acceleration variation due to errors [see Lingman: Abstract; Paragraphs [0007], [0011], [0020], [0028], [0034], [0036], [0045] and [0094]]. In addition, Examiner reminds Applicant that “a loop of estimated mass” is duplicate part for multiple effects and this generally does not provide patentable weight to the

claimed invention. See St. Regis Paper Co. v Bernis Co. 193 USPQ 8 (7th Cir. 1977).

the inclination is estimated based on the acceleration variation due to errors, and the recursive least-square algorithm depends on the inclination and has two modes, a flat mode when the inclination is situated in a predetermined interval of values corresponding the a plane structure, and a slope mode in other cases [see Lingman: Paragraphs [0020], [0028], [0044], [0073], 0077]].

Regarding claim 16, Lingman discloses during the processing of the data, an acceleration that a

slope sensor would provide is such were present is additionally estimated by the inclination of the surface on which the vehicle is additionally estimated by the inclination of the surface on which the vehicle is traveling, the inclination being provided by the inclination-estimating mechanism and the slope-sensor acceleration being used in the recursive least-square algorithm [see Lingman: Paragraphs [0028], [0055], [0087]].

Regarding claim 17, Lingman discloses an acceleration provided by a slope sensor being used in

the recursive least square is additionally processed surface on which the vehicle is traveling is calculated from the acceleration provided me slope sensor and from the calculation of longitudinal acceleration of the vehicle, and the recursive least-squares

algorithm depends on the inclination and has two modes, a flat mode when the inclination is situated in predetermined interval of values corresponding to a plane surface, and a slope mode in other cases [see Lingman: Paragraphs [0028], [0045], [0046], [0055], [0087]].

Regaridng claim 18, Lingman discloses the inclination of the surface on which the vehicle is traveling is calculated from the acceleration provided by the slope sensor and from the calculation of longitudinal acceleration of the vehicle [see Lingman: Paragraphs [0025], [0028], [0039]]; and the recursive least-squares algorithm depends on the inclination and has two modes, a fiat mode when the inclination is situated in a predetermined interval of values corresponding to a plane surface, and a slope mode in other cases [see Lingman: Paragraphs [0020], [0044] and [0045]].

Regarding claim 19, Lingman discloses a device for estimating total mass of a motor vehicle, comprising: a plurality of sensors including wheel-speed sensors [19], an engine-torque sensor [36], a rate of rotation of an engine sensor [36], a clutch-pedal position sensor [17], a brake-pedal position sensor [Paragraph [0070]: lines 1-5], means for detecting cornering of the vehicle [19], and an electronic control unit [26] to which the sensors are connected, wherein the electronic control unit includes:

> reinitialization means, means for estimating total mass of the vehicle by a recursive least-square algorithm [see Lingman: Paragraphs [0097], [0099], [0100]], including calculating longitudinal acceleration of the vehicle based on

Newton's Second Law of Motion, by analysis of errors, by an acceleration variation due to errors comprising an error in variation of he mass of the vehicle relative to a reference mass, an error in inclination of the surface on which the vehicle is traveling, and errors of a model; means for processing data transmitted by the sensors [see Lingman: Abstract; Paragraphs [0006], [0007], [0011], [0020], [0028], [0034], [0036], [0045] and [0094]]; means for enabling the processing of the data when the data remain respectively in predetermined intervals of values that ensure validity of the model; and supervising means for providing a default mass as long as the algorithm has not converged, by fixing the estimated mass when a predetermined convergence criterion has been reached [see Lingman: [0011], [0012]].

Regaridng claim 20, Lingman discloses a slope sensor configured to transmit a longitudinal acceleration of the vehicle to the means [see Lingman: Paragraphs [0028], [0055] and [0094]].

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lingman et al. (hereinafter "Lingman") (US Patent Application Pub. No. 2004/0167705) in view of Iwasaki (USPN. 5,944,763).

Regarding claim 21, Lingman describe the reinitialization instruction [see claim 12], but does not disclose that the reinitialization instruction is processed so that said total mass of said motor vehicle is measured when a door of the motor vehicle is opened.

Iwasaki teaches that the reinitialization instruction is processed so that said total mass of said motor vehicle is measured when a door of the motor vehicle is opened [see Iwasaki: col. 21, lines 10-30].

It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the invention of Lingman, to include the reinitialization instruction, as taught by Iwasaki, to determine the possibility of changing the weight of the load applied to the vehicle body and reset and restart the load mounted state [see Iwasaki: col. 21, lines 10-30].

Response to Arguments

6. Applicant's arguments filed 01/22/2008 have been fully considered but they are not persuasive.

Regarding amended claim 11, Applicants argue that Lingman does not disclose the amended limitation "*estimating the inclination of the surface on which the motor vehicle is traveling based on the acceleration variation due to errors, and the recursive least-square algorithm depends on the inclination and has two modes, a flat mode when the inclination is situated in a predetermined interval of values corresponding the a plane structure, and a slope mode when the inclination is not within the predetermined interval of values corresponding to the plane surface*" [see Applicants' Remarks Page 6, line 19-Page 7, line 20]. Accordingly, Lingman discloses the amended feature as recited above in claim 11 [see Lingman: Paragraphs [0020], [0028], [0044], [0073], 0077]].

Regarding claim 19, Applicants argue that Lingman does not disclose "a clutch-pedal position sensor" [see Applicants' Remarks: Page 7, line 21-Page 8, line 7]. Accordingly, element accelerator pedal 17 of Lingman meets the claimed "a clutch-pedal position sensor" [see Lingman: Paragraphs [0006], [0051], [0055], [0070]].

As to new claim 21, please see the above rejection in this Office Action.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHUONG HUYNH whose telephone number is (571)272-2718. The examiner can normally be reached on M-F: 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on 571-272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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